

S/020/61/141/006/015/021  
B103/B147

AUTHORS: Igonin, L. A., Mirakhmedov, M. M., Turchaninova, K. I., and Shabadash, A. N.

TITLE: Study of the infrared absorption spectra in the solidification process of resole phenol formaldehyde resin

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 141, no. 6, 1961, 1366-1368

TEXT: The infrared absorption spectra of resole phenol formaldehyde resin were studied in the course of its solidification between 20 and 200°C. Commercial resole resin (production, Ref. 1: L. A. Igonin, M. M. Mirakhmedov, *Plasticheskiye massy*, No. 1 (1962) in print) was dried in vacuo as well as subjected to a molecular distillation at 80°C in a vacuum of about  $10^{-4}$  mm Hg. Then, the resin was cold-pressed with 220 kg/cm<sup>2</sup>, subsequently the mold was heated with a rate of 1.5°C/min to a given temperature at which it was kept for 15 min, and then cooled rapidly to room temperature. The pulverized resin was mixed with KBr powder and pressed in vacuo under a pressure of 10 tons/cm<sup>2</sup> to 1.45 mm thick sheets which were used as windows in the Hilger spectroscope H-800  
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for photographing spectra. It is concluded from the spectra that increasing heating results in the following changes: The bands which are characteristic of the OH groups decrease owing to condensation of the resin. The wide band appearing at  $1050\text{ cm}^{-1}$  corresponds to the stretching vibrations of the C-O ether bond. Its appearance is caused by the initial conversion of the methylol groups to ether bridges. This band decreases at  $150^{\circ}\text{C}$  and disappears completely at  $170^{\circ}\text{C}$ . The  $1370\text{ cm}^{-1}$  band starts decreasing at  $70^{\circ}\text{C}$ . This is explained by reaction of the phenol-OH groups. The  $1645\text{ cm}^{-1}$  band characteristic of the C=C bond becomes visible already at  $130^{\circ}\text{C}$  and increases with increasing solidification temperature. At high solidification temperatures ( $170 - 200^{\circ}\text{C}$ ) the  $1379\text{ cm}^{-1}$  band appears in the spectrum of solidified resins, which is attributed to the formation of methyl groups. It is concluded from the results that the number of OH groups decreases during solidification and that the polymer chains in the initial stages of solidification are polyoxybenzyl ethers formed by interaction between the methylol groups. Probably, the decomposition of the ether bridges is accompanied by the formation of active centers the recombination of which leads to the formation of stable steric networks (resites). The radical decomposition mechanism

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of the ether bridge is confirmed by the phenol hydroxyl entering the solidification reaction and by the appearance of the methyl group owing to the recombination processes of the free radicals forming. There are 1 figure and 7 references: 1 Soviet and 6 non-Soviet. The three references to English-language publications read as follows: R. E. Richards, H. W. Tompson, J. Chem. Soc., 1947, 1260; R. J. Grisenthwaite, R. F. Hunter, J. Appl. Chem., 6, 324 (1956); N. J. L. Megson, Phenolic Resin Chemistry, London, 1958, p. 33.

ASSOCIATION: Nauchno-issledovatel'skiy institut plasticheskikh mass  
(Scientific Research Institute of Plastics)

PRESENTED: July 21, 1961, by V. A. Kargin, Academician

SUBMITTED: July 20, 1961

Card 3/3

BALTENAS, R.A., ICONIN, L.A.

Study of the effect of high pressures on melting temperature and viscosity of polyethylene melts.

Report presented at the 13th Conference on high-molecular compounds.  
Moscow, 8-11 Oct 62

IGONIN, L.A.; MIRAKHMEDOV, M.M.

Characteristics changes of the mechanical properties of resol  
phenol-formaldehyde resins taking place in the process of hardening.  
Plast.massy no.2:18-20 '62. (MIRA 15:2)  
(Phenol condensation products)

S/191/62/000/004/001/017  
B110/B138

AUTHORS: Igonin, L. A., Ratner, S. B., Tatevos'yan, G. O.

TITLE: Improved methods of testing plastics

PERIODICAL: Plasticheskiye massy, no. 4, 1962, 1-2

TEXT: With the aim of standardizing methods of testing plastics, the pervoye mezhvedomstvennoye rabocheye soveshchaniye po metodam ispytaniy plastmass (First Interdepartmental Working Conference on Methods of Testing Plastics) was held in Moscow in 1961 with 480 representatives from 179 organizations. V. A. Kargin, G. M. Bartenev, L. A. Igonin, Yu. M. Malinskiy, D. F. Kagan, S. A. Reytlinger, and A. D. Sokolov reported on the current situation. Then the following were discussed: (a) mechanical properties, (b) technological properties, (c) aging and chemical stability, (d) physical and chemical properties, (e) dielectric properties, (f) chemical and analytical methods, (g) technical requirements. Seven permanent working groups have been formed to study (a); four of them are on the standardization of mechanical tests (static, dynamic properties, friction and wear, heat and frost resistance), and

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three of them on the mechanical properties of foam and porous plastics, glued joints and microspecimens. Three permanent groups are studying (b); methods of testing thermoreactive materials, rheological characteristics of thermoplastics, and thermophysical properties. Three temporary groups are studying (c); chemical, thermal, optical, atmospheric, and biological stability, and migration of plasticizers. Temporary groups are studying (d); molecular weight determination, viscosity of solutions, gas and moisture permeability of films, etc. Permanent groups are studying (e). Temporary groups are studying (f); spectral analysis, analysis of aldehydes in mixed polyvinyl acetals, electrometric determination of monomers in polymers and copolymers, determination of Cl in organo-siloxanes, etc. One group is studying (g); technical requirements for resol and novolak resins, powder bakelite, phenol formaldehyde plastics, laminated plastics, aminoplasts, PVC, polystyrene and its copolymers, polyethylene, production and conditioning of samples. A permanent working commission for methods of testing plastics which is to be established within the Sovet po sinteticheskim materialam na osnove vysokomolekulyarnykh soyedineniy pri Goskomitete Soveta Ministrov SSSR po koordinatsii nauchno-issledovatel'skikh rabot (Council for Synthetic Materials Based on

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High-molecular Compounds at the Goskomitet of the Council of Ministers USSR for the Coordination of Scientific Research) will: (1) exchange experience on test methods, (2) coordinate scientific work, (3) standardize tests, (4) recommend testing apparatus for series production, (5) check proposals made by the NCO(TK-61) (ISO(TK-61)). It will consist of the following working groups: RG-1 - terminology and definitions, RG-2 - mechanical properties, RG-3/7 production and standardization of specimens, RG-4 for technological and thermal properties, RG-5a for physical and chemical properties, RG-5b for analytical methods, RG-6 for aging and chemical stability, RG-8 for dielectric properties, RG-9 for technical requirements, RG-10 for cellular materials. Standardization will provide for: (1) production processes, (2) good design of plants for processing, (3) reliable quality guides for industrial production, (4) engineering characteristics, (5) appropriate research for developing new materials. The Komissiya po mekhanike polimerov Goskhimkomiteta (the Goskhimkomitet Commission for Polymer Mechanics) has worked out five complex mechanical and technological characteristics for some polymers. State standards are to be published in the near future. Two interdepartmental commissions will be established for testing plastic

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tubes and polymer films. The production of apparatus and the training of laboratory staff will be intensified.

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YERMOLINA, A.V.; IGONIN, L.A.; KARGIN, V.A.

Relation between physicomachanical properties and the  
nature of secondary structures in crystallizing polymers. .  
Part 2: Photomicrographic investigation of the spherulite  
structure of polyamide 68 in bulk. Vysokom.soed. 4  
no.9:1380-1384 S '62. (MIRA 15:11)

1. Nauchno-issledovatel'skiy institut plasticheskikh  
mass.

(Polyamides)  
(Crystallization)

S/051/62/012/002/006/020  
E202/E192

AUTHORS: Kuindzhi, B.M., Igonin, L.A., Gribova, Z.P., and  
Shabadash, A.N.

TITLE: Photochromism and electron paramagnetic resonance  
of  $\alpha$ -(o,p-dinitrobenzyl)-pyridine (I)

PERIODICAL: Optika i spektroskopiya, v.12, no.2, 1962, 220-223

TEXT: The authors discuss the mechanism of tautomeric radical conversions taking place in  $\alpha$ -(o,p-dinitrobenzyl)-pyridine (I), caused by the exposure to light. (I) was prepared from  $\alpha$ -(benzyl)-pyridine and recrystallized repeatedly from alcohol. The melting points of the yellow and violet forms were both the same (93 °C). I-N-CH<sub>3</sub>- $\alpha$ -(o,p-dinitrobenzyl)-pyridine and N-CH<sub>3</sub>- $\alpha$ -(o,p-dinitrobenzyl)-pyridine were also prepared, but neither of them showed any phototropic or paramagnetic properties. The e.p.r. spectrum was studied in a spectrometer with double modulation of the magnetic field and with synchronous detection and registration in the form of the first derivative. Arrangements were made to heat the sample directly in the resonator. The illumination was by unfiltered Hg-in-quartz lamp.  
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Photochromism and electron ...

S/051/62/012/002/006/020  
E202/E192

The concentration of paramagnetic particles in (I) after two hours illumination was  $10^6$ , and the e.p.r. signal of the same had a width of about 50 oerst. showing a non-symmetric doublet with a g-factor equal approximately to that of a free electron. The change in the e.p.r. signal after illumination indicated the presence of two free radicals. This was further confirmed by the formation of the peroxy-radicals. It was concluded that the reversible change in colour and the appearance of paramagnetism in (I) was dependent on the tautomeric radical changes caused by exposure to ultraviolet radiation. There are 2 figures.

SUBMITTED: February 8, 1961

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S/020/62/145/005/009/020  
B106/B144

AUTHORS: Abramova, I. M., Yermolina, A. V., Igonin, L. A., and Kargin, V. A., Academician

TITLE: Morphology of the supermolecular structure of polyformaldehyde

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 145, no. 5, 1962, 1047-1048

TEXT: The types of secondary structures formed by cooling polyformaldehyde melts were studied with a metallographic microscope. To avoid thermal destruction, the melts were quickly cooled from 180°C to 160°C, kept at this temperature for 2 hrs, and then slowly cooled to room temperature. The secondary structures were examined in layers of various thicknesses ( $10^{-2}$  mm to a few mm). Molten polyformaldehyde readily crystallizes when cooled slowly, forming manifold types of supermolecular structures of varying perfection. This occurrence is associated with the high regularity and flexibility of the macromolecules. In very thin layers ( $10^{-2}$  mm), structures of the highest orders are formed, i. e., crystals with polyaxial symmetry recalling the shape of snow crystals. The growth mechanism

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Morphology of the supermolecular ...

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of these crystals resembles that of low-molecular substances. With increasing thickness of the layers the geometrical forms become less regular and the sharp boundaries between crystals disappear. In thick layers, only single spherulites of fibrous structure without distinct boundaries have been observed. The same picture was obtained when etching the surface of polyformaldehyde blocks. The diameters of the crystalline bodies range between 50 and 200  $\mu$ . All forms show a distinctly voluminous structure and the growth is therefore three-dimensional. Polyformaldehyde samples having a different characteristic viscosity form some other structures besides those described. When polyformaldehyde has been stored for 3 - 4 months its melting point rises the secondary structure no longer appears in so great a variety of forms. There are 3 figures. The two most important English-language references are: M. L. Huggins, J. Chem. Phys., 13, 37 (1945); C. F. Hammer, T. A. Koch, J. F. Whitney, J. Appl. Polym. Sci., 1, 169 (1959).

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy institut plasticheskikh mass (State Scientific Research Institute of Plastics)

SUBMITTED: April 18, 1962

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L 12837-53

EPR/EWP(j)/EPF(c)/EWT(m)/BDS AFFTC/ASD Ps-L/Pe-L/Pr-L

RM/WW/JFW

ACCESSION NR: AP3003224

S/0020/63/150/006/1280/1281

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AUTHOR: Igonin, L. A.; Turchaninova, K. I.

TITLE: Radical mechanism of hardening of bakelite resins

SOURCE: AN SSSR. Doklady\*, v. 150, no. 6, 1963, 1280-1281

TOPIC TAGS: free-radical reaction, bakelite resin, dimethacrylate ethylene glycol

ABSTRACT: The basis of the hardening process in thermoreactive resins is the chemical reaction which takes place between active functional groups of the molecule. These structural formations explain the physical and chemical changes in the resin. This investigation presents additional data to the data already available, which points out the role of free-radical processes in the mechanism of the hardening of phenolformaldehyde resins. It was assumed that the free radicals are capable of initiating polymerization of unsaturated hydrocarbons. In order to examine this assumption, the polymerization rate of dimethacrylate ethylene glycol in the presence of bakelite resin was studied. In addition to this, a model compound bis-2-hydroxy-3,5-dimethylbenzene ether was investigated

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L 12837-63  
ACCESSION NR: AP3003224

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by EPR method in order to get a definite proof of the decomposition of dimethylene ether bridge in the bakelite resin into free radicals and to explain the formation of free radicals. The experimental results confirm the decomposition of dimethylene ether bonds during the hardening of bakelite resins according to the radical mechanism with the consequent formation of radicals. Thus, the obtained results prove the theory of the important role in the free radical process. This report was presented by Academician V. A. Kargin, 21 Feb 63. Orig. art. has: 2 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut plasticheskikh mass  
(Scientific-Research Institute for Plastics)

SUBMITTED: 14Feb63

DATE ACQ: 24Jul63

ENCL: 00

SUP CODE: 00

NO REF SOV: 007

OTHER: 002

Card 2/2



IGONIN, L.A.; YERMOLINA, A.V.

Effect of the degree of molecular ordering of crystallizing  
polymers in melts on the viscoelastic properties of melts.  
Dokl. AN SSSR 153 no.4:863-864 D '63. (MIRA 17:1)

1. Nauchno-issledovatel'skiy institut plasticheskikh mass  
Gosudarstvennogo komiteta Soveta ministrov SSSR po khimii.

ACCESSION NR: AP4038529

S/0020/64/156/003/0634/0636

AUTHORS: Baltenas, R.A.; Igonin, L.A.

TITLE: Selfadhesion of polyethylene under high pressures

SOURCE: AN SSSR. Doklady\*, v. 156, no. 3, 1964, 634-636

TOPIC TAGS: polyethylene self adhesion, polyethylene bonding, polyethylene, high pressure, branching degree

ABSTRACT: The purpose of this work was to find the influence of polyethylene structure (crystallinity, ordered chains, branching) versus temperature and pressure on polyethylene bonding. For this purpose, polyethylene disks, 10 mm in diameter and 0.5 mm thick were placed in a bushing of fluorinated plastic (to prevent edge bonding) and subjected to pressures up to 6000 kg/cm<sup>2</sup> and temperatures to 240C for 15 m. Then pressure was relieved and the disks were torn apart recording the stress required. It was found that higher pressures cause melting points to rise and the melting interval to widen, probably due to recrystallization problems. Adhesion curves clearly mark partial adhesion and complete welding when tensile strength becomes identical to that of the material itself.

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ACCESSION NR: AP4038529

A comparison of the welding temperature and of initial bonding of high and low pressure ethylene indicates that the former require higher temperatures due to its higher branching (PE 1 -3,3CH<sub>3</sub>/100CH<sub>2</sub> vs PE 2 0.8CH<sub>3</sub>/100CH<sub>2</sub>). This leads to the conclusion that self-adhesion data for polyethylene under pressure can be used as a simple and convenient method of determining the degree of its branching. "Gratitude is expressed to V.A. Kargin, Academ. for discussing the present work." Orig. art. has: 3 figures.

ASSOCIATION: Institut khimii i khimicheskoy tekhnologii AN LitSSR (Institute of Chemistry and Chemical Engineering, AN LitSSR)

SUBMITTED: 03Feb64

ENCL: 00

SUB CODE: MT

NR REF SOV: 009

OTHER: 002

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TURCHANINOVA, K.I.; IGONIN, L.A.

Studying the products forming during the thermal decomposition  
of bis-2-hydroxy- 3,5-dimethylbenzyl ether. Plast. massy no.8:  
45-47 '64. (MIRA 17:12)

L 40989-65

ACCESSION NR: AP5006563

meter, and the secondary structure was examined by microphotographing brittle cleavage sections of samples kept for 2 hrs. in liquid nitrogen. The state of molecular orderliness of the polycarbonates was found to be closely related to the chain's chemical composition, the more complex and bulky chains of PK-2 displaying poorly ordered amorphous structural patterns, inferior to the more perfect spherulitic structural patterns of PK-1. The former, however, exhibited greater impact (140-160 kg/cm<sup>2</sup>, and tensile (800 kg/cm<sup>2</sup>) strength than the latter. The polymer sample was provided by the Kafedra tekhnologii vysokomolekulyarnykh soyedineniy MKhTI (Department of the Technology of Macromolecular

TERMOLENA, A.V.; ANDRE, G.P.; PECHENKIN, A.A.; IGONIN, L.A.; KOTRELFV, V.N.;  
AKUTIN, M.S.

Microscopic and X-ray diffraction study of the structure of  
polycarbonates in a block. Plast. massy no.3:43-46 '65.

(MIRA 18:6)

BAITENAS, R.A.; IGONIN, I.A.

BAITENAS, R.A.; IGONIN, I.A.

Thermographic study of the melting of polyethylene. Dokl. AN SSSR  
163 no.4:917-919 Ag '65. (MIRA 18:8)

1. Institut khimii i khimicheskoy tekhnologii AN Litovskoy SSR.  
Submitted January 20, 1965.

L 1621-66 ENT(m)/EPP(o)/EMP(j)/T/ETC(m) WW/RM

ACCESSION NR: AP5020832

UR/0020/65/163/004/0917/0919

AUTHOR: Baltenas, R. A. <sup>4456</sup> Igonin, L. A. <sup>4456</sup>

TITLE: Thermographic study of polyethylene melting <sup>15.4455</sup>

SOURCE: AN SSSR. Doklady, v. 163, no. 4, 1965, 917-919

TOPIC TAGS: polyethylene plastic, melting, thermogram, crystallization

ABSTRACT: The characteristics of melting polyethylene (PE) under pressure and the effect of various factors on the kinetics of the melting process were studied thermographically. Polyethylenes having different degrees of ordering were used: I--high pressure PE (degree of branching 3.3 CH<sub>3</sub>/100 CH<sub>2</sub>; 60% crystallinity), II-low pressure PE (1.06; 79%) and III-PE prepared on oxide catalysts (0.4; 88%). Thermograms were obtained for pressures to 3000 kg/cm<sup>2</sup>. The fusion temperature increased with pressure increase in all samples; pressure had the greatest effect on I and the least on III. Further examination of the melting of I and its dependence on cooling rates showed that decrease in the crystallization

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ACCESSION NR: AP5020832

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rate extended the melting range of the polymer. I, when subjected to isothermal crystallization, formed supermolecular structures with a perfect crystal lattice and melted sharply; when cold drawn, the melting range spread significantly, indicating a disoriented structure. It was concluded that the spread in the melting range of a crystalline polymer with a significant number of defects is associated with local internal stresses originating in the defect sites. These lower the thermal stability of the crystal lattice, causing the melting to start at lower temperatures. "The authors thank Acad. V. A. Kargin for discussing the results of this work." Orig. art. has: 4 figures 44,05

ASSOCIATION: Institut khimii i khimicheskoy tekhnologii AN LitSSR (Institute of Chemistry and Chemical Technology, AN LitSSR)

SUBMITTED: 05Oct64

ENCL: 00

SUB CODE: MT

NR REF SOV: 003

OTHER: 008

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L 18471-66 EWT(m)/BWP(j)/T RM

ACC NR: AP6004534

(A)

SOURCE CODE: UR/0236/65/000/004/0079/0085

AUTHOR: Bal'tenene, Ya. Yu. (Balteniene, J.); Igonin, L. A. (Igoninas, L.) 26 B

ORG: Institute of Chemistry and Chemical Engineering, Academy of Sciences Lithuanian SSR (Institut khimii i khimicheskoy tekhnologii Akademii nauk Litovskoy SSR)

TITLE: Fractional precipitation of polymers in a centrifuge 14455

SOURCE: AN LitSSR. Trudy. Seriya B. Fiziko-matematicheskoye, khimicheskoye, geologicheskoye i tekhnicheskoye nauki, no. 4, 1965, 79-85

TOPIC TAGS: chemical precipitation, centrifugation, polystyrene, polycarbonate, molecular weight

ABSTRACT: The use of a centrifuge to accelerate the fractional precipitation of polymers is described. In order to achieve a rapid determination of the molecular weight distribution (MWD) of polymers, the fractional precipitation in a centrifugal field was carried out (1) by evaporating the solvent and (2) by lowering the temperature. The MWD of polystyrene and polycarbonate was determined in this way. Fractional precipitation by lowering the temperature in the centrifuge, used for

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ACC NR: AP6004534

polystyrene both under normal conditions and in a centrifugal field, gave better results than precipitation by fractional addition of the precipitant. It is shown that during fractional precipitation by lowering the temperature, the tendency of the macromolecules to aggregate decreases owing to the absence of desolvation. While the two methods are equally accurate, the one employing temperature drop is much faster. Orig. art. has: 4 figures, 3 tables.

SUB CODE: 07/

SUBM DATE: 26Jun65/

ORIG REF: 004/

OTH REF: 006

Card 2/2

MIKUL'SKIY, Valentin Gavrilovich, kand. tekhn. nauk dots.;  
IGONIN, Leonid Anan'yevich, inzh.; GORCHAKOV, G.I.,  
nauchn. red. z

[Bonding and gluing concrete in structures] Stseplenie i  
skleivanie betona v sooruzheniakh. Moskva, Stroiizdat,  
1965. 126 p. (MIRA 18:12)

ACC NR: AM6014512

(A)

Monograph

UR/

Mikul'skiy, Valentin Gavrilovich (Candidate of Technical Sciences; Docent); Igonin, Leonid Anan'yevich (Engineer)

Bonding and adhesion of concrete in constructions (Stsepleniye i skleivaniye betona v sooruzheniyakh) Moscow, Stroyizdat, 65. 0126 p. illus., biblio. 6,000 copies printed.

TOPIC TAGS: construction material, concrete, adhesive bonding, bonding material, polymer, structure dynamic stability

PURPOSE AND COVERAGE: This book presents basic conditions affecting bonding of new cement (solution) with old cement conformably to monolithic and sectional construction. Also, a theoretical explanation is given of the process occurring. Means of improving bonding strength of cements are given. Special attention is given to polymer admixtures and glue for secure cementation. These problems are viewed under conditions of static and dynamic loads. The book is recommended for production engineers, designers and scientists.

TABLE OF CONTENTS (abridged):

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Ch. I. General concepts of adhesion—8

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UDC:691.3:693.547

ACC NR: AM6014512

- Ch. II. Conditions for secure bonding of new cement with old--16
- Ch. III. Application to cementation of polymer materials--51
- Ch. IV. Adhesion of structures with epoxide glues--84
- Ch. V. Behavior of cementation structures under dynamic loads--107
- Bibliography--120

SUB CODE: 13, // / SUBM DATE: 078ep65/ ORIG REF: 124/ OTH REF: 021

Card 2/2

DZHAKSON, I.M.; MILYUSHKEVICH, G.F.; Primal uchastiye: IGONIN, L.F.,  
tekhnik

Method for the application of a chronic fistula to the pancreatic  
duct in rats. Fiziol.zhur. 47 no.3:405-408 Mr '61.. (MIRA 14:5)

1. From the Institute of Experimental Medicine, Leningrad.  
(PANCREATIC DUCT—SURGERY)

*IGONIN, P.G.*

I-8

USSR/Chemical Technology - Chemical Products and Their  
Application. Treatment of Natural Gases and Petroleum.  
Motor and Jet Fuels. Libricants.

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 2560

Author : Igonin, P.G.

Inst :

Title : Concerning Some Regularities of the Process of Destructive  
Distillation of Petroleum Raw Materials.

Orig Pub : Khimiya i tekhnol. topliva i masel, 1957, No 6, 63-65

Abstract : In a semi-industrial ceramic coke oven coking of 35% resi-  
due of vacuum distillation of a cracking residue was con-  
ducted at 1150 and 1290°. During the coking process de-  
terminations were made of the concentration of oils, tars,  
asphaltens and carboids in the reaction products. The re-  
sults so obtained confirmed the previously proposed, by  
Sakhanov and Tolichyev, scheme of the formation of car-  
boids, and at the same time it was ascertained that only

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Maximum concen-  
to 20-21% and does not de-  
pend on the temperature.

04/03/2001

CIA-RDP86-00513R000518



AUTHOR: Igonin, P.G.

65-6-12/13

TITLE: Causes of foaming of petroleum raw materials during thermal decomposition. (Prichiny, obuslovliyayushchiye vspenivaniye neftyanogo syr'ya pri termicheskom razlozhenii)

PERIODICAL: "Khimiya i Tekhnologiya Topliva i Masel" (Chemistry and Technology of Fuels and Lubricants) 1957, No.6, pp.66-68 (USSR).

ABSTRACT: During destructive distillation of heavy petroleum raw materials severe foaming is observed. Analysis of this phenomenon indicated that there is a straight line relationship between the coking number of the material treated and the ratio of the increase in its volume (table and fig.) This relationship can be expressed by equation

$V_1 - V_0 = k K_n$  ..... (1), where  $V_1$  - the volume of charge during maximum foaming,  $V_0$  - initial volume of charge,

$k$  - coefficient and  $K_n$  - coking number.  $k$  was experimentally determined with an apparatus on which 20 g samples can be tested (description given). For a unit volume of the

Card 1/2 initial raw material equation (1) can be written  $\Delta V = 0.17 k_n$ .

Causes of foaming of petroleum raw materials during thermal decomposition. (Cont.)

65-6-12/13  
Thus from the above equation the quantity of heavy petroleum residue which can be charged into a given distillation vessel can be calculated providing its coke number is known.

There are 1 figure, 1 table, and 2 references, both of which are Slavic.

ASSOCIATION: Gros NII.

AVAILABLE:

Card 2/2

IGCNIN, P.G.; DASYATOVA, I.D., inzh.; MITROPANOV, M.G., kand. tekhn. nauk.

Changes in catalyst concentration in the process of the oxidation  
of paraffin wax. Masl.-shir. prom. 24 no.3:26-28 '58. (MIRA 11:4)

1. Groznenskiy nauchno-issledovatel'skiy institut.  
(Paraffin wax) (Oxidation) (Catalysts)

IGONIN, P.G.; DESYATOVA, I.D.; ZAVIDOV, V.I.

Specific reaction rate of higher fatty acid formation during the  
oxidation of hard paraffin. Azerb. neft. khov. 37 no.2:44-46 P '58.  
(Paraffins) (Acids, Fatty) (MIRA 11:6)

AUTHORS:

TITLE:

PERIODICAL:

ABSTRACT:

Isculin, P. G.; Vakaman, A. A. and Desyatova, (Koksovaniye neftyanogo peka v promyshlennyykh dinasovykh pechakh). pp. 59 - 64. (USSR).  
 When attempting to improve the properties of petroleum coke the latter has to be processed at high temperature in plants which make it possible to treat repeatedly the coke mass with new portions of raw material. The authors established that ceramic kilns were most satisfactory (Ref. 1). After laboratory investigations, carried out in a pilot plant, tests were carried out on an industrial scale in the Zaporozh'ye plant during 1954 - 55. Data are given in a table. The coking of this petroleum pitch at 1200°C is characterised by a long cycle (Table 1) which are given in a table. The rate of the coking of 29% pitch was used in the Zaporozh'ye plant during 1954 - 55. Data obtained shows that the length of this petroleum pitch is smaller of the higher the temperature of the coking cycle, heating of the raw material. The rate of the coking of liquid and gaseous coking products in the kilns with each charge. Therefore, the equilibrium of

SOV/65-58-8-12/14

**AUTHORS:** Igcnin, P. G; Vaksman, A. A. and Desyatova, I. D.

**TITLE:** The Coking of Petroleum Pitch in Industrial Dinas Kilns.  
(Koksovaniye neftyanogo peka v promyshlennykh dinasovykh pechakh).

**PERIODICAL:** Khimiya i Tekhnologiya Topliv i Masel, 1958, Nr.8.  
pp. 59 - 64. (USSR).

**ABSTRACT:** When attempting to improve the properties of petroleum coke the latter has to be processed at high temperatures in plants which make it possible to treat repeatedly the coke mass with new portions of raw material. The authors established that ceramic kilns were most satisfactory (Ref.1). After laboratory investigations, carried out in a pilot plant, tests were carried out on an industrial scale in the Zaporozh'ye plant during 1954 - 55. 29% pitch was used as raw material, physical properties of which are given in a table. The coking of this petroleum pitch at 1200°C is characterised by a long cycle (Table 1). Data obtained shows that the length of the coking cycle is smaller the higher the temperature of the preliminary heating of the raw material. The rate of formation of liquid and gaseous coking products in the kilns varies with each charge. Therefore, the equilibrium of materials

Card 1/3

SOV/65-58-8-12/14

## The Coking of Petroleum Pitch in Industrial Dinas Kilns.

and the properties of the products will depend on the point and time of establishing material equilibrium, and also when samples of gaseous and vaporous coking products are taken off for analysis. Weight of the load of raw material varied between 10 and 21-t. Values obtained on the material equilibrium are given in Table 2. Data in Table 3 shows that the properties of coke are not so dependent on the nature of the raw material as on the conditions of preparation. During the coking of petroleum pitch about 40% of distillate is obtained. This distillate has a high specific weight, a high naphthalene content and a high coking number. The percentage composition of the coke distillate is given. It was fractionated in a 6 m column (35 plates) and was found to contain 13.9% hydrocarbons (boiling between 79° and 205°C), a benzene fraction and 16.9% of a fraction boiling between 210° and 330°C. The content of sulphonating compounds in the benzene fraction having an iodine number of 103 and a molecular weight of 113 = 62%. The content of aromatic hydrocarbons was defined according to the GrozNII method (Ref.2) and did not exceed 16.5%. The octane number = 75 which makes it possible to use this fraction as a

Card 2/3

SOV/65-58-9-12/14

The Coking of Petroleum Pitch in Industrial Dinas Kilns.

component for motor fuel. The yield of gaseous products was approximately equal to that obtained during the coking of analogous raw material in a Dinas kiln (Ref.1). The hydrocarbon composition of the gas only differed by the absence of butylenes. When the temperature during the coking of petroleum pitch is increased to 650°C the butylene content decreases, and no butylenes were present at temperatures exceeding 750°C (Table 5). About 17 - 18% of other unsaturated hydrocarbons (ethylene and propylene) are contained in the coking gas; the yield of ethylene is twice as high as that of propylene. The GPK-49 type of construction for Dinas kilns was found to be most satisfactory. Kilns consisting of three blocks can produce up to 80,000-t per year of high quality coke. There are 5 Tables and 4 Soviet References.

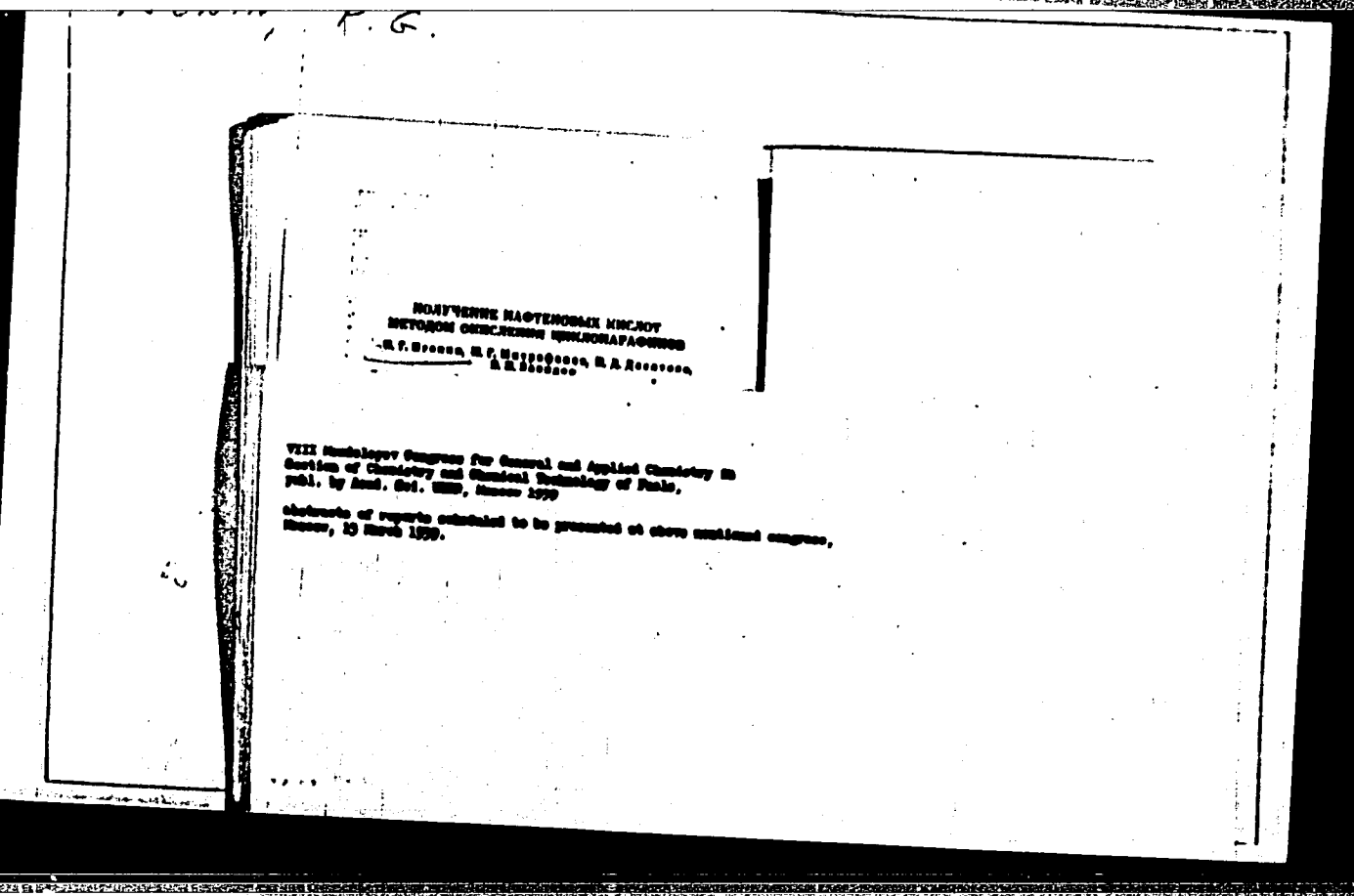
ASSOCIATION: \* GrozNII.

1. Petroleum--Processing
2. Petroleum--Properties
3. Furnaces
- Performance
4. Ceramic materials--Applications

CARD 3/3

\* GOZNEENSKIY NAUCHNO-ISLEDOVATEL'SKIY NEFTYANOY INSTITUT.





IGONIN, P.G.; DESYATOVA, I.D.; PASHENKO, M.A.; ZAVIDOV, V.I.

Some data on the oxidation of solid paraffin in the presence of  
a permanganate, a naphthenate, and manganese carboxyl salts.  
Trudy GrozNII no.4:224-236 '59. (MIRA 12:9)  
(Paraffins) (Oxidation)

MEL'NIKOVA, N.P.; IGONIN, P.G.; SHAKHZADOVA, I.A.

Study of the adsorption capacity of various coals using radioactive indicators. Khim. i tekhn. topl. i masel 4 no.1:28-31 Ja '59.  
(MIRA 12:1)

(Coke)      (Adsorption)      (Radioactive tracers)

ZAVIDOV, V.I., inzh.; IGONIN, P.G.

Investigating eastern paraffin as a raw material for the production  
of fatty acids. Masl.-shir.prom. 26 no.8:16-18 Ag '60.  
(MIRA 13:8)

1. Groznenskiy nauchno-issledovatel'skiy neftyanoy institut.  
(Paraffins) (acids, Fatty)

5.1100

175-5  
SOV/65-60-2-5/15

AUTHORS: Igonin, P. G., Mktrofanov, M. G., Desyatova, I. D.,  
Zavidov, V. I.

TITLE: Oxidation of Naphthenes To Obtain Naphthenic Acids

PERIODICAL: Khimiya i tekhnologiya topliv i masel, 1960, Nr 2  
pp 25-27 (USSR)

ABSTRACT: Production of naphthenic acids from petroleum and its products is limited. The authors examined a method of obtaining these acids and gas oil fractions from heavy petroleum, that originally contained up to 50% naphthenes, undergo oxidation after extraction of aromatic compounds. The experimental paraffin-free distillate, after extraction of aromatic compounds, had the following properties: density  $\rho_{40}^{20} = 0.8677$ ; distillation range 229 to 302° C; kinematic viscosity at 20° C = 5.98; solidification point = -71° C;

Card 1/3

Oxidation of Naphthenes To Obtain  
Naphthenic Acids

715-5  
SOV/65-60-2-5/15

refraction index = 1.4710; molecular weight = 204;

aniline point = 71° C; naphthene content = 100%.

The oxidation was carried out with an installation described by V. K. Tsyskovskiy (Trudy VNIIT,

February, 1955). A manganese salt of C<sub>10</sub> - C<sub>16</sub> aliphatic acids was used as catalyst. The fraction, oxidized for 40 to 50 hr, contained 60 to 65% hydroxy acids.

The naphthenic acid: hydroxy acid ratio can, however, be altered by changing the degree of oxidation. The extracted naphthenic acid had the following properties (the corresponding figures for natural naphthenic acid, extracted from Emba oil, are given in parentheses):

molecular weight = 216 (218); density  $\rho_4^{20} = 1.0130$

(0.9972); acid number = 240 (260); saponification number = 260 (—); iodine number = 3.8 (2.6); refraction index = 1.4768 (1.4829). Thus, the synthetic product has about the same properties as the natural naphthenic acid. The method produces more hydroxy

Card 2/3

Oxidation of Naphthenes To Obtain  
Naphthenic Acids

77545  
S07/65-60-2-5/15

acids than naphthenic acids. The naphthenes, suitable for acid production, seem to have molecules, whose alkyl side chains contain one or more tertiary carbon atoms, at least 2 or 3 carbons removed from the ring. There are 12 references, 11 Soviet, 1 U.S. The latter is: G. Wietzel, Special Supplement to Chemical Eng.

ASSOCIATION: Groznyy Petroleum Scientific Research Institute (GrozNII)

Card 3/3

ZAVIDOV, V.I.; IGONIN, P.G.; DESYATOVA, I.D.

Paraffin obtained from the destructive distillation of the heavy fraction of hydrocarbons boiling above 450° as a raw material for the production of synthetic fatty acids. Khim.i tekhn. topl.i masel 5 no.9:26-31 S '60. (MIRA 13:9)

1. Groznenskiy nauchno-issledovatel'skiy neftyanoy institut.  
(Paraffins) (Acids, Fatty)



IGONIN, P.G.; DESYATOVA, I.D.; PASHENKO, M.A.; ZAVIDOV, V.I.

Effect of catalysts on the rate of formation and the composition of  
carboxylic acids. Khim.i tekhn.topl.i masel 5 no.10:21-24 0 '60.  
(MIRA 13:10)

1. Groznenskiy nauchno-issledovatel'skiy neftyanoy institut.  
(Paraffins) (Catalysts) (Acids, Organic)

IGONIN, P.G.; PASHENKO, M.A.; SLOBODSKOY, L.N.

Effect of the degree of petrolatum oxidation on the quality of the  
"p" binder used in casting. Khim. i tekhn. topl. i masel. 6 no.10:  
25-29 0 '61. (MIRA 1411)

1. Groznenskiy nauchno-issledovatel'skiy neftyanoy institut.  
(Petrolatum) (Binding materials)

IGONIN, P.G., inzh.; PASHENKO, M.A., inzh.

Methods for intensifying the catalytic activity of manganese  
organic salts. Masl.-zhir.prom. 27 no.5:27-28 My '61.  
(MIRA 14:5)

1. Groznenskiy nauchno-issledovatel'skiy neftyanoy institut.  
(Manganese salts) (Catalysis)

IGONIN, P.G.; DORODNOVA, V.S.; ROMANOV, A.V.; MAL'TSEVA, M.Ya.

Structural group composition of paraffin wax and intermediate products from distillates of Transterek Valley crudes.  
Khim.i tekhn.topl.i masel 7 no.6:26-30 Je '62. (MIRA 15:7)

1. Groznenskiy nauchno-issledovatel'skiy neftyanoy institut.  
(Terek Valley--Petroleum)  
(Paraffin wax)

IGONIN, P.G.; SVITKIN, V.V.; Prinimali uchastiye: CHEBOTAREV, A.F., starshiy  
tekhnik; FEDOTOV, Yu.V., starshiy operator

Effect of soap concentration on the completeness of separation  
of unsaponifiables. Khim.i tekhn.topl.i masel 7 no.2:29-31 F '62.  
(MIRA 15:1)

1. Groznenskiy nauchno-issledovatel'skiy neftyanoy institut.  
(Acids, Fatty) (Paraffins) (Saponification)

IGONON, P.G., inzh.; SVITKIN, V.V., inzh.; MITROFANOV, M.G., kand.tekhn.nauk;  
 SLEPTSOV, Yu.S., inzh.; KOLOZHVARI, A.A., inzh.; PASHENKO, M.A., inzh.;  
 ZHIVOLUPOV, M.A., inzh.; Primali uchastiye: MUSHENKO, D.V.;  
 TSYSKOVSKIY, V.K.; SHCHEGLOVA, TS.N.; FREYDIN, B.G.; PYL'NIKOV, V.I.;  
 LEVINA, M.I.; LEVIN, A.I.; LUR'YE, Ye.I.; BAYKINA, T.A.; UDOVENKO, S.A;  
 MARCHENKO, T.A.

Effect of the method of liquid paraffin oxidizing on the yield and  
 quality of the obtained fatty acids. Masl.-zhir.prom. 28 no.11:20-23  
 N '62. (MIRA 15:12)

1. Groznenskiy nauchno-issledovatel'skiy neftyanoy institut (for Igonin, Svitkin, Mitrofanov, Sleptsov, Kolozhvari, Pashenko, Zhivolupov).
2. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov (for Mushenko, Tsykovskiy, Shcheglova, Freydin, Pyl'nikov, Levina, Levin).
3. Lengiprogaz (for Lur'ye, Baykina).
4. VNIISINZh (for Udoenko, Marchenko).

(Paraffins)

(Acids, Fatty)

IGONIN, P.G.; SVITKIN, V.V.; SLEPTSOV, Yu.S.; KOLOZHVARI, A.A.; PASHENKO, M.A.;  
GLOTSEY, Ye.M.

Oxidation of naphthenic hydrocarbons. Nefteper. i neftekhim.  
no.1:17-19 '63. (MIRA 16:10)

1. Groznenskiy nauchno-issledovatel'skiy institut.

L 10227-63

RM/EN/WW/MAY/DJ

ACCESSION NR: AP3000503

EWP(j)/EPF(c)/EWT(m)/BDS--AFFTC/ASD/APGC--Pc-Li/Pr-Li--

S/0065/63/000/005/0034/0038

AUTHOR: Igonin, P. G.; Svitkin, V. V.; Kolozhvari, A. A.; Sleptsov, Yu. S.; Glotsker, Ye. M. 74

TITLE: Oxidation of isoparaffinic hydrocarbons

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 5, 1963, 34-38

TOPIC TAGS: oxidation, isoparaffinic hydrocarbons, isoparaffinic acids, plasticizers, flotation agents, synthetic lubricant esters, motor alkylate

ABSTRACT: Isoparaffinic acids are of interest as starting materials for the production of plasticizers, flotation agents, and synthetic lubricant esters. The synthetic fatty acid pilot plant of GrozNII was used for oxidation of motor alkylate containing no hydrocarbons complexing with urea. The oxidation was done with air at 120C and a manganese-potassium soap catalyst to an acid number of 70 mg KOH per gram. The oxidate was saponified and the acids isolated and fractionated. Nearly 90% forms no complex with urea. When compared to fractions of synthetic fatty acids distilling within the same limits, the acids obtained in this work have higher acid numbers and lower pourpoints. Heat treatment strongly reduces the

Card 1/2



L 10227-63

ACCESSION NR: AP3000503

content of petroleum ether insolubles formed in the oxidation. Orig. art. has; 6  
tables. 0

ASSOCIATION: GrozNII

SUBMITTED: 00

DATE ACQD: 12Jun63

ENCL: 00

SUB CODE: CH

NO REF SOV: 002

OTHER: 001

YH/dk  
Card 2/2

PAL'CHIKOV, G.F.; IGONIN, P.G.; PASHENKO, M.A.

Crude for obtaining synthetic naphtehenic acids. Trudy  
GrozNII no. 15:294-297 '63. (MIRA 17:5)

IGONIN, P.G.; SVITKIN, V.V.; SLEPTSOV, Yu.S.; KOLOZHVARI, A.A.;  
PASHENKO, M.A.; GLOTSER, Ye.M.

Oxidation of naphthenic hydrocarbons. Trudy GrozNII no. 15:  
298-302 '63. (MIRA 17:5)

IGONIN, P.G.; SVITKIN, V.V.; MITROFANOV, M.G.; SLEPTSOV, Yu.S.;  
KOLOZHVARI, A.A.; PASHENKO, M.A.; ZHIVOLUPOV, M.A.

Continuous and periodic oxidation of liquid paraffins to  
produce synthetic fatty acids. Trudy GrozNII no. 15-303-322  
'63. (MIRA 1745)

ACCESSION NR: AT4016004

S/2625/63/000/015/0323/0332

AUTHOR: Igonin, P.G.; Svitkin, V.V.; Kolozhvari, A.A.; Sleptsov, Yu. S.; Glotser, Ye. M.

TITLE: Oxidation of isoparaffinic hydrocarbons

SOURCE: Groznyy. Neftyanoy nauchno-issledovatel'skiy institut. Trudy\*, no. 15, 1963. Tekhnologiya pererabotki nefi i gaza. Neftekhimiya (Technology of processing petroleum and gas. Petroleum chemistry), 323-332

TOPIC TAGS: hydrocarbon, hydrocarbon oxidation, organic acid, alkylate, motor alkylate, isoparaffinic hydrocarbon

ABSTRACT: Since the paraffins which are oxidized in the production of synthetic fatty acids also contain isoparaffinic hydrocarbons, the authors studied the oxidation of a motor alkylate consisting entirely of hydrocarbons which do not form complexes with carbamide. Both the entire motor alkylate and the 200-300C fraction were first oxidized under laboratory conditions on a glass column at 117 or 125C, and then on the 8ZhK experimental apparatus at 120C with Mn and K soaps as catalysts. The density, molecular weight, acid number, Card 1/2

ACCESSION NR: AT4016004

ether number, iodine number and other characteristics of the products are tabulated for each case. The results show that motor alkylates must be oxidized under a pressure of 2-3 atm. The theoretical scheme for the preparation of acids having an iso structure is analogous to that used for the preparation of synthetic fatty acids. However, the acids obtained from motor alkylates consist almost entirely of acids which do not form complexes with carbamide. During the oxidation of isoparaffinic hydrocarbons, a large number of products which are insoluble in petroleum ether are formed, the acid content of which sharply decreases after thermal treatment. The oxidation of motor alkylates yields acids, the fractions of which are similar to the fractions of fatty acids, but which have lower solidification points and acid numbers. Orig. art. has: 8 tables.

ASSOCIATION: Neftyanoy nauchno-issledovatel'skiy institut, Groznyy (Petroleum Scientific Research Institute)

SUBMITTED: 00

DATE ACQ: 31Jan64

ENCL: 00

SUB CODE: 00

NO REF SOV: 003

OTHER: 000

Card : 2/2

IGONIN, P.G.; DORODNOVA, V.S.; SVITKIN, V.V.

Separating higher alcohols from secondary unsaponifiables.  
Nefteper. i neftekhim. no.8:23-25 '64. (MIRA 17:10)

1. Grozenenskiy neftyanoy nauchno-issledovatel'skiy institut.

DEMIN, M.N.; IGONIN, V.M.; GORYACHENKO, N.A.; TRINKIN, N.R.; YANTOVSKIY, I.A.;  
TRUBIN, A.K.

Coating leather for uppers with nitro dye solutions at high  
temperatures. Kozh.-obuv.prom.3 no.4:13-15 Ap '61. (MIRA 14:5)  
(Dyes and dyeing—Leather)



IGONIN, V.P., tekhnik; VERSHININ, A.S., inzh.

Detonating blast holes without percussion caps. Bezop.truda.v  
prom. 6 no.12:30 D '62. (MIRA 15:12)

(Blasting)

IGONIN, V. V.

YEREMIN, Ye. N.; AL'TSHULER, M. Z.; KIR'YASHKINA, Z. I.; IGONIN, V. V.

Acetylene

Formation of acetylene in the electrocracking of methane. Part 1. Static experiments.  
Zhur. prikl. khim. 20, No. 1, 1947.

9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

IGONIN, V.V., LAZAREVA, L.YE., LEPESTRIN, A.I., ZATSEPINA, G.N.

"Angular and Energy Distribution of Photoneutrons,"

Lebedev Physics Inst. Acad. Sci. USSR and Saratov State University

paper submitted at the A-U Conf. on Nuclear Reactions in Medium and Low Energy  
Physics, Moscow, 19-27 Nov 57.

3/903/62/000/000/033/044  
B102/B234

AUTHORS: Zatsepina, G. N., Igonin, V. V., Lazareva, L. Ye.,  
Lepestkin, A. I.

TITLE: Direct photoeffect on heavy nuclei with low excitation energies

SOURCE: Yadernyye reaktsii pri malykh i srednikh energiyakh; trudy  
Vtoroy Vsesoyuznoy konferentsii, iyul' 1960 g. Ed. by  
A. S. Davydov and others. Moscow, Izd-vo AN SSSR, 1962, 479-485

TEXT: Disc-shaped targets of Bi ( $3.91 \text{ g/cm}^2$ ) and Au ( $3.77 \text{ g/cm}^2$ ) were ex-  
posed to bremsstrahlung of  $E_{\gamma \text{ max}} = 14 \text{ Mev}$  of the FIAN synchrotron and the  
( $\gamma, n$ ) and ( $\gamma, 2n$ ) reactions (thresholds 7.4 and 14.2 Mev for Bi and 8.0 and  
14.9 Mev for Au) taking place were investigated as to the neutron energy  
spectra and the levels excited in the target nuclei were calculated. The  
recoil protons were recorded with 400- $\mu$  MUKH-A2 (NIKFI-Ya2) emulsion plates  
arranged at angles of 30, 90, 150 and  $270^\circ$  to the  $\gamma$ -ray direction, at a  
distance of 16 cm from the target center. In microscopic scanning only the  
recoil protons scattered through small angles with respect to the neutrons  
( $\pm 15^\circ$  in the emulsion plane and  $\pm 20^\circ$  inside the emulsion) for neutrons with

Card 1/2

00513R00051841001

L 13621-63

EWI(m)/BDS AFFTC/ASD

ACCESSION NR: AP3003099

S/0056/63/044/006/1787/1799

58  
53

AUTHOR: Zatsepina, G. N.; Igonin, V. V.; Lazareva, L. Ye.; Lepestkin, A. I.

TITLE: Angular and energy distributions of photoneutrons from bismuth, gold, and tantalum

SOURCE: Zhurnal eksper. i teor. fiziki, v. 44, no. 6, 1963, 1787-1799

TOPIC TAGS: photoneutron, angular distribution, energy distribution, bismuth, gold, tantalum, giant resonance region

ABSTRACT: The angular and energy distributions of photoneutrons from bismuth, gold, and tantalum irradiated by X-rays of peak energy 14 and 19 MeV were measured in order to study the interaction between Gamma quanta and heavy nuclei in the region above the giant resonance. The work was done with the synchrotron (30 MeV) of the Physics Institute, Academy of Sciences SSSR. The photoneutron spectra were registered by their recoil protons, using nuclear emulsions, which were scanned under microscopes. Summary spectra were obtained for the neutrons emitted at right angles (90 and 270°) to the x-ray beam, and also for the angles 30 and 150°. Their experimental results were compared with calculation made by the evaporation model and by the independent-particle model. The neutron energy

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L 13621-63

ACCESSION NR: AP3003099

5

regions in which the various calculated and experimental distributions agree and disagree are discussed in light of the possible shells and possible transitions to which they can be due. "The work was done at the Physics Institute, Academy of Sciences SSSR, in collaboration with the staff members of the Saratovskiy gosudarstvennyy universitet im. N. B. Chernishevskiy (Saratov State University.) N. Ya. Avdokushina, L. V. Baranova, and L. P. Bogatkina helped with the scanning of the emulsions, for which the authors express their deep gratitude." Orig. art. has: 2 formulas, 9 figures, and 3 tables.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute, Academy of Sciences SSSR)

SUBMITTED: 02Jan63

DATE ACQ: 23Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 003

OTHER: 023

Card 2/2

KLOCHIKHIN, L. V.; IGONINA, G. I.

Goiter of the root of the tongue. Probl. endok. i gorm. 8 no.3:  
100-101 My-Je '62. (MIRA 15:6)

1. Iz ~~Vst'~~-Kamenogorskoy gorodskoy bol'nitsy (glavnyy vrach  
A. I. Yerasov)

(GOITER) (TONGUE—DISEASES)

22517

5.3700 2209

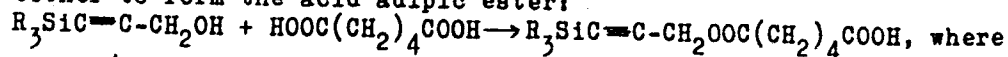
S/062/61/000/004/006/008  
B118/B208

AUTHORS: Shostakovskiy, M. F., Komarov, N. V., Kuznetsova, V. P., and  
Igonina, I. I.

TITLE: Study in the field of synthesis and conversions of unsaturated  
organosilicon compounds. 1. Esterification of primary and  
tertiary  $\gamma$ -silicon-containing acetylene alcohols by adipic  
acid

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,  
no. 4, 1961, 699-703

TEXT: The authors studied the esterification of primary and tertiary  
 $\gamma$ -silicon-containing acetylene alcohols with adipic acid. This esterifica-  
tion was accomplished by direct reaction of the alcohols with adipic acid,  
and by reaction of these alcohols, or their magnesium derivatives, with  
adipic acid chloride. The esterification of the primary  $\gamma$ -silicon-con-  
taining acetylene alcohols with adipic acid without catalysts takes place  
either to form the acid adipic ester:



Card 1/4

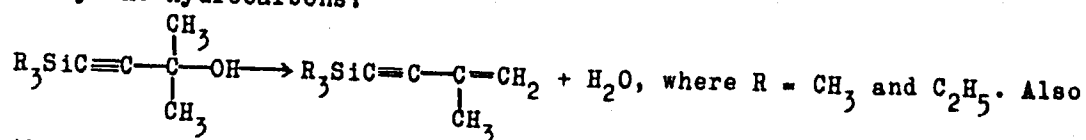


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B118/B208

Study in the field...

R = CH<sub>3</sub>, C<sub>2</sub>H<sub>5</sub>, and C<sub>6</sub>H<sub>5</sub>, or to form the neutral adipic ester:  
 $2R_3SiC \equiv C-CH_2OH + HOOC(CH_2)_4COOH \rightarrow R_3SiC \equiv C-CH_2OOC(CH_2)_4COOCH_2C \equiv CSiR_3$ ,  
 where R = CH<sub>3</sub> and C<sub>6</sub>H<sub>5</sub>, depending on the conditions and the quantitative ratio of the components. This method is, however, not applicable to the esterification of tertiary  $\gamma$ -silicon-containing acetylene alcohols, since the reaction of these alcohols with adipic acid, with or without acid catalysts (such as boric acid etc.) gives rise to dehydration of the initial alcohols with formation of the corresponding silicon vinyl acetylene hydrocarbons:



the esterification of tertiary  $\gamma$ -silicon-containing acetylene alcohols by their reaction with adipic acid chloride in the presence of pyridine as well as the ester interchange of these alcohols with dimethyl adipate under the action of sodium ethylate were unsuccessful. The synthesis of

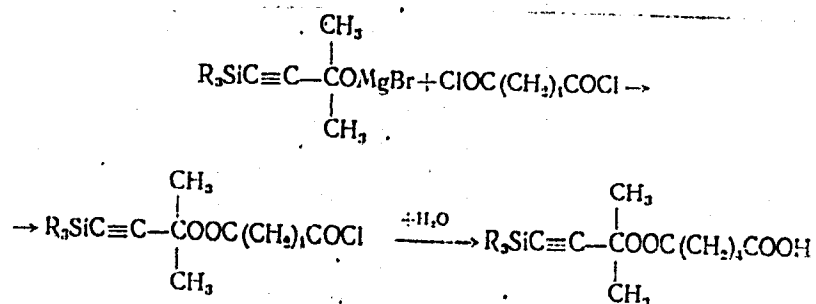
Card 2/4

22517

Study in the field...

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acid and neutral esters of tertiary  $\gamma$ -silicon-containing acetylene  
alcohols was accomplished by reaction of magnesium alcoholates with adipic  
acid chloride

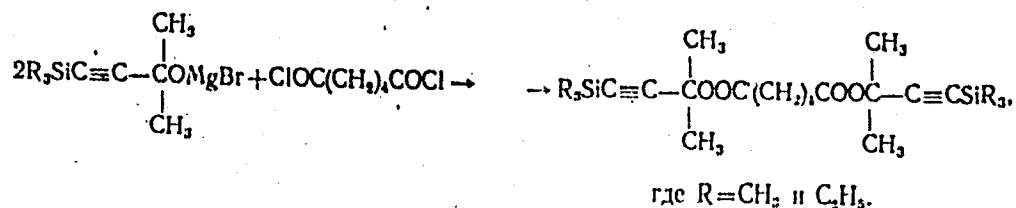


Card 3/4

Study in the field...

22517

S/062/61/000/004/006/008  
B118/B208



There are 7 Soviet-bloc references.

ASSOCIATION: Irkutskiy institut organicheskoy Khimii Sibirskogo  
otdeleniya AN SSSR (Irkutsk Institute of Organic Chemistry  
of the Siberian Branch of the Academy of Sciences USSR)

SUBMITTED: December 15, 1959

Card 4/4

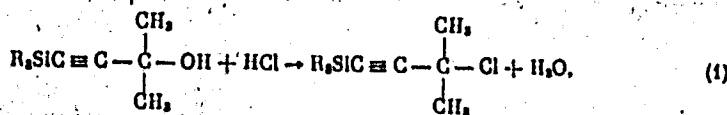
S/062/62/000/003/013/014  
B110/3101

**AUTHORS:** Shostakovskiy, M. F., Komarov, N. V., Kuznetsova, V. P.,  
and Igonina, I. I.

**TITLE:** Investigations into synthesis and conversions of unsaturated  
organosilicon compounds. Communication 3. Interaction of  
tertiary  $\gamma$ -silicon acetylene alcohols with concentrated  
hydrochloric acid and thionyl chloride

**PERIODICAL:** Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh  
nauk, no. 3, 1962, 510-512

**TEXT:** The reaction of tertiary  $\gamma$ -silicon acetylene alcohols with  
concentrated hydrochloric acid and thionyl chloride showed that the low  
homologs of tertiary  $\gamma$ -silicon acetylene compounds react easily and  
almost quantitatively with concentrated hydrochloric acid:



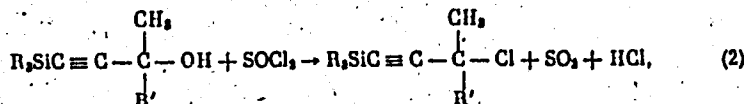
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where  $\text{R} = \text{CH}_3, \text{C}_2\text{H}_5$ .

Investigations into synthesis and...

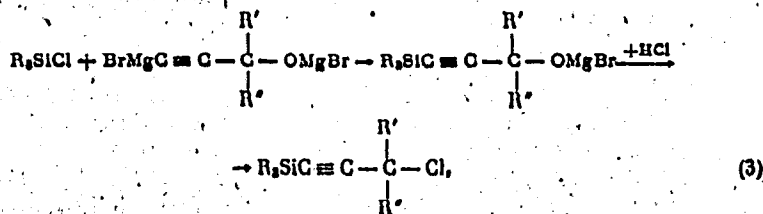
S/062/62/000/003/013/014  
B110/B101

Rupture of the Si-C bond conjugated with the triple bond does not take place here. The exchange of hydroxyl for chlorine only occurs partially; it could be obtained, however, with  $\text{SOCl}_2$ ;



where R and R' =  $\text{CH}_3$ ,  $\text{C}_2\text{H}_5$  etc.

Here too, the Si-C bond is stable. Tertiary  $\gamma$ -silicon acetylene chlorides may be obtained directly from triaryl(alkyl)chlorosilanes, magnesium derivatives of acetylene alcohols and concentrated HCl:



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Investigations into synthesis and...

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where R, R' and R'' are organic radicals. This method produces a 70 % yield. Tertiary  $\gamma$ -silicon acetylene chlorides are colorless, easily movable liquids of specific odor, soluble in organic solvents and insoluble in water. The following compounds were synthesized from the corresponding alcohols: 4-trimethyl-silyl-2-methyl-2-chlorobutyne-3, b. 49°C (14 mm Hg),  $n_D^{20}$  1.4415,  $d_4^{20}$  0.8774; 5-trimethyl-silyl-3-methyl-3-chloropentyne-4, b. 61-62°C (8 mm Hg),  $n_D^{20}$  1.4602,  $d_4^{20}$  0.9082, and 4-triethyl-silyl-2-methyl-2-chlorobutyne-3, b. 101-102°C (16 mm Hg),  $n_D^{20}$  1.4525,  $d_4^{20}$  0.8861. ✓

ASSOCIATION: Irkutskiy institut organicheskoy khimii Sibirskogo otdeleniya Akademii nauk SSSR (Irkutsk Institute of Organic Chemistry of the Siberian Department of the Academy of Sciences USSR)

SUBMITTED: October 24, 1961

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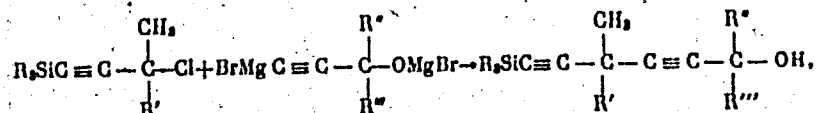
S/062/62/000/003/014/014  
B110/B101

AUTHORS: Shostakovskiy, M. F., Komarov, N. V., Kuznetsova, V. P.,  
Igonina, I. I., and Semenova, N. V.

TITLE: Investigations into synthesis and conversions of unsaturated  
organosilicon compounds. Communication 4. Synthesis and  
some conversions of organosilicon diacetylene alcohols with  
isolated ternary bonds

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh  
nauk, no. 3, 1962, 512-515

TEXT: The reaction of tertiary  $\gamma$ -silicon acetylene chlorides with  
magnesium derivatives of primary, secondary and tertiary acetylene alcohols  
was studied:

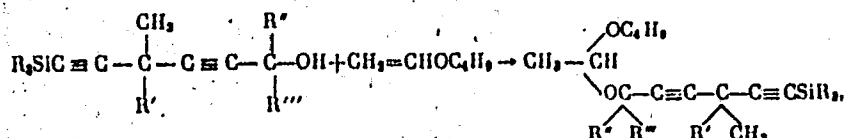


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Investigations into synthesis and...

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where R and R' are similar or dissimilar organic radicals, R'' and R''' = H or organic radicals. The reaction proceeds easily under formation of organosilicon diacetylene compounds with isolated ternary bonds. The behavior of this new class of organosilicon compounds was tested with regard to acetal formation, dehydration and exchange of hydroxyl for halogen. Organosilicon diacetylene alcohols with vinyl butyl ether produced organosilicon diacetylene acetals, not yet described:



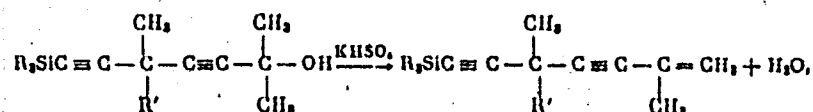
where R and R' are similar and dissimilar organic radicals; R'' and R''' = H or organic radicals. Primary alcohols react without catalyst under heating, secondary ones without catalyst during heating, and tertiary ones require concentrated hydrochloric acid as catalyst. Tertiary silicon acetylene alcohols are dehydrated by the action of KHSO<sub>4</sub>:

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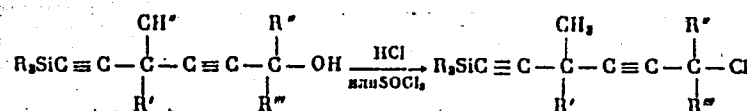
Investigations into synthesis and...

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where  $\text{R} = \text{CH}_3$ ;  $\text{R}' = \text{CH}_3$  or  $\text{C}_2\text{H}_5$ .

The dehydration of secondary alcohols is not possible in this way. When treated with concentrated hydrochloric acid or thionyl chloride, tertiary alcohols exchange hydroxyl for chlorine:



no rupture taking place at the Si-C bond conjugated to the triple bond. The following compounds were synthesized: 6-trimethyl-silyl-4,4-dimethyl-hexadiin-2,5-ol-1, b. 98-99°C (2 mm Hg),  $n_D^{20}$  1.4736,  $d_4^{20}$  0.8973; 7-trimethyl-silyl-5,5-dimethyl-heptadiin-3,6-ol-2, b. 116°C (12 mm Hg),

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$n_D^{20}$  1.4675,  $d_4^{20}$  0.8930; 7-trimethyl-silyl-2,5,5-trimethyl-heptadiin-3,6-cl-2, b. 102°C (7 mm Hg), m. 41-42°C; 7-trimethyl-silyl-2,5-dimethyl-5-ethyl-heptadiin-3,6-ol-2, b. 105°C (6 mm Hg),  $n_D^{20}$  1.4697,  $d_4^{20}$  0.8867; 6-trimethyl-silyl-4,4-dimethyl-hexadiin-2,5-butylacetal, b. 133-134°C (5 mm Hg),  $n_D^{20}$  1.4590,  $d_4^{20}$  0.8993; 6-trimethyl-silyl-1,4,4-trimethyl-hexadiin-2,5-butylacetal, b. 121-122°C (2 mm Hg),  $n_D^{20}$  1.4465,  $d_4^{20}$  0.8670; 6-trimethyl-silyl-1,1,4,4-tetramethyl-hexadiin-2,5-butylacetal, b. 134-135°C (9 mm Hg),  $n_D^{20}$  1.4439,  $d_4^{20}$  0.8523; 6-trimethyl-silyl-1,1,4-trimethyl-4-ethylhexadiin-2,5-butylacetal, b. 122-123°C (2 mm Hg),  $n_D^{20}$  1.4502,  $d_4^{20}$  0.8786; 7-trimethyl-silyl-2,5,5-trimethyl-heptadiin-3,6-ene-1, b. 90-91°C (7 mm Hg),  $n_D^{20}$  1.4658,  $d_4^{20}$  0.8187; 7-trimethyl-silyl-2,5-dimethyl-5-ethyl-heptadiin-3,6-ene-1, b. 89-90°C (6 mm Hg),  $n_D^{20}$  1.4732,  $d_4^{20}$  0.8754; 7-trimethyl-silyl-2-chloro-2,5,5-trimethyl-

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heptadiin-3,6, b.78-79°C (3 mm Hg),  $n_D^{20}$  1.4605,  $d_4^{20}$  0.9044, and  
7-trimethyl-silyl-2-chloro-2,5-dimethyl-5-ethylheptadiin-3,6, b.93-94°C,  
 $n_D^{20}$  1.4666,  $d_4^{20}$  0.8982.

ASSOCIATION: Irkutskiy institut organicheskoy khimii Sibirskogo  
otdeleniya Akademii nauk SSSR (Irkutsk Institute of Organic  
Chemistry of the Siberian Branch of the Academy of  
Sciences USSR)

SUBMITTED: October 24, 1961

Card 5/5

SHOSTAKOVSKIY, M.P.; SHERGINA, N.N.; KOMAROV, N.V.; BRODSKAYA, E.I.;  
IGONINA, I.I.

Vibrational spectra of some organosilicon acetylene and diacetylene  
compounds. Izv. AN SSSR. Ser. khim. no.6:1126-1128 Je '64.

(MIRA 17:11)

1. Institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR.

ON NR: AT5013282

AUTHOR: Dubinskaya, N. V.; Gzhelyak, R. A.; Igonina, I. V.

UR/3043/66/000/004/0062/0076

TITLE: The calculation of Prandtl Meyer flow taking into account the nonequilibrium air dissociation

SOURCE: Moscow. Universitet. Vychislitel'nyy tsentr. Sbornik rabot, no. 4, 1965. Chislennyye metody v gazovoy dinamike (Numerical methods in gas dynamics), 62-76

TOPIC TAGS: air flow, Prandtl Meyer flow, flow analysis, supersonic flow, adiabatic flow, dissociated gas

ABSTRACT: The present paper applies the method of characteristics to the calculation of nonequilibrium supersonic flows of reacting gases. In contradistinction to the method of characteristics as applied to the flow of gases with constant adiabatic index, the problem is solved using differential relationships which are applicable along the flow line. As an example, the Vychislitel'nyy tsentr (Computer Center) of the MGU carried out detailed calculations of the Prandtl Meyer flow of dissociating air with temperatures up to 6000K. Results show that the presence of the nonequilibrium substantially affects the flow parameters. Orig. art. has: 18 formulas and 12 figures.

Card 1/2

IGONINA, M. T.

IGONINA, M. T., STUKS, G. G., KLEITMAN, E. I.

Certain modifications in morphological blood composition, and rate of erythrocyte sedimentation in rheumatic children treated by means of radioactive mineral baths at the health resort Belokurikha, Vopr. pediat. 18:3, 1950. p. 8-11

1. Of the Children's Sanatorium of Belokurikha Health Resort, of the Department of Hospital Pediatrics (Scientific Director of Sanatorium and Head of Department--Prof. G. G. Stuks), and of the Department of Pathophysiology (Head--Prof. D. I. Gol'dberg), Tomsk Medical Institute.

CLML 19, 5, Nov., 1950

VOROB'YEV, A.A.; VASIL'YEV, N.N.; YENICHEV, V.M.; PATRIKEYEV, G.T.;  
SHEVELEV, V.M.; ZYBIN, V.D.; KORNEV, I.S.; ANAN'YEVA, Ye.P.  
Prinimali uchastiye: ANDROSHCHUK, S.M.; NIKOLAYENKO, Yu.P.;  
MAKAROVA, V.A.; CHERNOVA, Yu.S.; POYARKOVA, M.A.; IGONINA, Yu.A.;  
MORDUYEVA, A.A.

Study of botulin anatoxins. Report No.2: Botulin anatoxin type B.  
Zhur.mikrobiol., epid. i immun. 32 no.10:68-72 O '61. (MIRA 14:10)  
(CLOSTRIDIUM BOTULINUM) (TOXINS AND ANTITOXINS)

VOROB'YEV, A.A.; VASIL'YEV, N.N.; SAMORODOV, L.M.; VORONTSOV, I.V.;  
PATRIKEYEV, G.T.; MAKARENKO, M.M.; ~~Prinimali~~ uchastiye:  
ANDROSHCHUK, S.M.; ZYBIN, V.D.; KORNEV, I.S.; NIKOLAYENKO,  
Yu.P.; CHERNOVA, V.A.; IGONINA, Yu.A.; MORDUYEVA, A.A.

Study of botulin anatoxins. Report No.4: Botulin anatoxin type  
E. Zhur. mikrobiol., epid. i immun. 33 no.1:72-79 Ja '62.

(MIRA 15:3)

(CLOSTRIDIUM BOTULINUM) (TOXINS AND ANTITOXINS)



VOROB'YEV, A.A.; KOROB'OV, A.M.; POYARKOVA, M.A.; KORNEV, I.S.;  
ANDROSHCHUK, S.M.; priniimali uchastiye: MORLUYEVA, A.A.; IGONINA,  
Yu.A.; CHERNOVA, Yu.S.; NIKOLAYENKO, Yu.P.; MAKAROVA, V.A.

Method for preparing sorbed tetanus anatoxin from a purified and  
concentrated toxin. Zhur.mikrobiol., epid.i immun. 33 no.8:107-112  
Ag '62. (MIRA 15:10)

(TOXINS AND ANTITOXINS) (TETANUS)

KORNEV, I.S.; YENICHEV, V.M.; MORDUYEVA, A.A.; IGONINA, Yu.A.; PATRIKEYEV, G.T.;  
ANDROSHCHUK, S.M.; ZYBIN, V.D.; SHISHULINA, L.M.

Culture media other than meat extracts for the preparation of  
A and B botulin anatoxins. Vak. i syv. no.1:3-11 '63.

(MIRA 18:8)

VOROB'YEV, A.A.; VASIL'YEV, N.N.; PATRIKEYEV, G.T.; ZYBIN, V.D.; KORNEV, I.S.;  
ANAN'YEVA, Ye.P.; Prinimali uchastiye: ANDROSECHUK, S.M.; IGONINA, Yu.S.;  
SHMELEV, V.M.; MORDUYEVA, A.A.; NIKOLAYENKO, Yu.P.; MAKAROVA, V.A.;  
CHERNOVA, Yu.S.; POYARKOVA, M.A.

Study of botulin anatoxins. Report No.1: Botulin anatoxin type A.  
Zhur. mikrobiol., epid. i immun. 32 no.9:31-36 S '61. (MIRA 15'2)  
(CLOSTRIDIUM BOTULINUM) (TOXINS AND ANTITOXINS)

ANDREYUK, L.V.; IGON'KIN, M.I.

Device for the straightening of roll warpage on blooming mills.  
Metallurg 8 no.9:36 S '63. (MIRA 16:10)

1. Magnitogorskiy metallurgicheskiy kombinat.  
(Rolling mills—Attachments)

ARKHIPOVA, A.P.; ICON'KINA, G.S.; SERGIYENKO, V.A.

Road emulsions under arctic-region conditions. Avt.dor. 25  
no.11:10-12 N '62. (MIRA 15:12)

(Road materials)

NIKISHINA, Mariya Filippovna; EVENTOV, Iosif Markovich; ARKHIPOVA,  
Aleksandra Pavlovna; BEGUNKOVA, Ninel' Ivanovna; BORODINA,  
Lyubov' Alekseyevna; IGON'KINA, Galina Sergeyevna;  
NAZAROV, Vladimir Vladimirovich; ALEKSEYEV, A.P., red.

[Emulsions used in road construction] Dorozhnye emul'sii.  
[By] M.F.Nikishina i dr. Moskva, Transport, 1964. 171 p.  
(MIRA 17:12)

SHISHKINA, V.I.; PUSHKAREVA, Z.V.; IGON'KINA, T.N.

Products of the reaction between 3-aminocarbazole and  
8-hydroxynaphthoic acid. Zhur.prikl.khim. 34 no.8:1895-1898  
Ag '61. (MIRA 14:8)

1. Ural'skiy politekhnicheskiy institut imeni S.M. Kirova.  
(Carbazole)  
(Naphthoic acid)

IGON'KINA, V.M., inzhener; PASTUKHOV, I.F., inzhener.

Measures for reducing cable wear on the UPF and SVF machines.  
Torf. prom. 34 no.4:21-24 '57. (MLBA 10:6)

1. Sitnikovskoye torfopredpriyatiye.  
(Electric cables)



IGOREV, A. [Ihoglev, A.]

Unusual trip. Znan.ta pratsia no.7:10-12 J1 '60.  
(Lvov--Motorbuses) (MIRA 13:8)

IGOREV, A. [Ihoriev, A.]

Broom, "Rocket" and high yields. Znan. ta pratsia no.5:20-21  
My '62. (MIRA 15:6)  
(Spraying and dusting equipment)

IGOREV, A. [Ihoriev, A.]

Beyond the highway next to a rainbow. Znan. ta pratsia no.7:7-9 J,  
'62. (MIRA 15:7)

(Kobaki—Agriculture)

IGOREV, A. [Ihoriev, A.]

Depth tsunami. Znan.ta pratsia no.8:16-18 Ag '62.

(MIRA 15:12)

(Waves)